

CLAIMS

What is claimed is:

1. A process for controlling when gear shifting occurs in a transmission of a cycle having at least one gear sprocket, the process comprising the steps of:

assigning said at least one gear sprocket at least one given angular position in which shifting is facilitated;

providing a sensor to detect said angular position of said at least one gear sprocket in which shifting is facilitated; and

selectively activating said sensor according to a command request to initiate a shift.

2. The process according to claim 1, further comprising the steps of preventing a shift when said sensor detects that said gear sprocket is not in the angular position in which shifting is facilitated and allowing a shift when said sensor detects that said gear sprocket is said angular position in which shifting is facilitated.

3. The process according to claim 1, wherein the step of assigning includes assigning said at least one gear sprocket at least one given angular position corresponding to at least one set of teeth of said gear sprocket.

4. The process according to claim 1, further comprising the steps of shifting a transmission element with respect to said at least one gear sprocket when said sensor detects said angular position in which shifting is facilitated.

5. A system for controlling when gear shifting occurs in the transmission of a cycle, the system comprising:

at least one gear sprocket having at least one angular position in which shifting is facilitated;

at least one sensor for detecting the angular position in which shifting is facilitated and generating a corresponding signal; and

a control unit for activating said sensor according to a command request.

6. The system according to claim 5, further comprising a transmission element, wherein said control unit is configured for controlling, in response to the corresponding signal, a change in position of the transmission element with respect to the at least one gear sprocket when the sensor detects the angular position in which shifting is facilitated.

7. The system according to claim 6, wherein the at least one gear sprocket is associated to a crank axle of the cycle, and wherein said at least

one facilitating angular position corresponds to at least one set of teeth of said gear sprocket.

8. The system according to claim 6, wherein said at least one sensor is associated to one of a crank axle of said cycle and a tensioning element.

9. A method for controlling gear shifting on a bicycle having a plurality of sprockets with at least one sprocket including teeth with a sequence of differentiated geometries which define facilitating portions on said gear sprocket, the teeth carrying a transmission element, the method comprising the steps of:

a) detecting a processing signal representative of an affirmative shift command;

b) detecting an angular position of the at least one gear sprocket in response to the processing signal;

c) comparing the angular position of the at least one gear to the angular position of the facilitating portions of the at least one gear;

d) shifting the transmission element from the at least one gear sprocket to another gear sprocket if the detected angular position of the at least one gear corresponds to one of the facilitating portions,

wherein steps (b)-(d) are performed only after step (a).

10. The method of claim 9, wherein the steps (a) – (d) are continuously performed.

11. A system for controlling gear shifting in a transmission of a cycle comprising at least one gear wheel on which is engaged a transmission element that performs transmission of motion as a result of its advance in a pre-determined direction; the gear shifting being carried out by changing the position of engagement of said transmission element with respect to said at least one gear wheel, wherein said at least one gear wheel has at least one given angular position in which the shifting of said element for transmitting motion is facilitated, said system comprising:

at least one sensor for detecting the position of said at least one gear wheel for generating a respective signal;

a control unit for controlling, starting from said respective signal, the change of the position of said element for transmitting motion;

at least one switch for selective activation of said at least one sensor according to a command for changing the position of said element for transmitting motion with respect to said at least one gear wheel; and

said control unit being configured for preventing shifting of said at least one gear wheel when the gear wheel is not in an angular position corresponding to said at least one given angular position, and then allowing

change of position of said transmission element when said at least one gear wheel is rotated to a next angular position corresponding to said at least one given angular position.

12. A process for controlling gear shifting in the transmission of a cycle comprising at least one gear which engages a transmission element that performs transmission of motion as a result of its advancement in a pre-determined direction; the gear shifting being carried out by changing the position of engagement of said transmission element with respect to said at least one gear, the process comprising the steps of:

detecting the angular position of said at least one gear;

controlling change of position of said element for transmitting motion with respect to said at least one gear depending on the detected angular position;

providing sensor means for detecting the angular position of said at least one gear; and

selectively activating said sensor means according to a command request for changing the position of said element for transmitting motion with respect to said at least one gear.